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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,589	11/13/2003	Michael A. Yandrasits	59391US002	8996

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EXAMINER

MCCLENDON, SANZA L

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,589

Applicant(s)

YANDRASITS ET AL

Examiner

Sanza L McClendon

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,11-16,19-22,24-26 and 28 is/are rejected.
- 7) ☒ Claim(s) 3,9,10,17,18,23 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/05 & 4/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-8, 11-16, 19-22, 24-26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al (JP 2001-354641) in view of Watakabe et al (JP 2002-003466) and Asawa et al (JP 54-052690).

Okada et al teaches fluorine-containing compounds. Said fluorine compound is a fluorine-containing nitrile compound containing fluorosulfonyl groups and cyano groups. Said compound is taught as useful in the formation of a perfluorocarbon polymer composition having fluorosulfonyl groups and nitrile groups that upon crosslinking forms triazine bridge formations (crosslinks), which can be used for making polyelectrolyte films for fuel cells—see paragraph 0017. This appears to read on claim 1. Okada does not expressly teach using making a polymer from said compound having sulfonic acid groups.

Watakabe et al teaches fluorine-containing nitrile compounds having sulfonic groups and cyano groups. Said fluorine-containing nitrile compound is prepared by hydrolyzing the fluorosulfonyl derivative of the fluorine containing nitrile compound of the invention with an ion exchange resin. The reference further discloses said compound is useful as an electrolyte and will form triazine crosslinks upon polymerization of said cyano groups—see paragraph 0016.

Okada et al and Watakabe et al are from the same field of endeavor that is the art of teaches fluorine-containing nitrile compounds. Therefore it would have been obvious for an artisan of ordinary skill in the art to prepare a perfluorocarbon polymer composition having sulfonic acid groups and nitrile groups that upon crosslinking forms triazine bridge formations (crosslinks) for the teachings of Watakabe et al for the use of making polyelectrolyte films for fuel cell. The motivation would have been a reasonable expectation of successfully obtaining a polyelectrolyte for use in a fuel cell as suggested by both references.

While Okada et al and Watakabe et al teach said polyelectrolytes can be used to make polyelectrolyte films, both references fail to teach a method. However Asawa et al teaches method of making cation exchange membrane. Said method includes preparing a copolymer having fluorosulfonyl groups, forming said copolymer into a membrane and then crosslinking with radiation or heat to form a crosslinked polymer member comprising pendent sulfonyl groups.

Okada et al, Watakabe et al, and Asawa et al are analogous art because they are from the same field of endeavor that is the art of fluorine-containing polymers having pendent sulfonyl groups for use as polyelectrolyte films in fuel cell.

Therefore it would have been obvious for an ordinarily skill artisan at the time of the invention to use the method of film formation and crosslinking, as taught by Asawa et al, for the hydrolyzed polymer obtained from the combination of Watakabe et al and Okada et al. The method would have been a reasonable expectation of obtaining a crosslinked polyelectrolyte film having excellent reinforcement and endurance at elevated temperatures as suggest by Okada et al and Watakabe et al—see paragraph 0006 in both references.

The inventions of the above rejected claimed can be found in the combination of references.

Allowable Subject Matter

3. Claims 3, 9-10, 17-18, 23, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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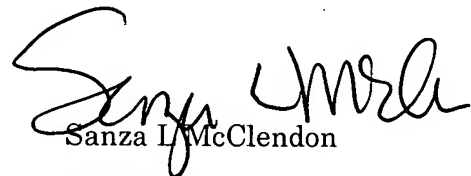
4. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach said pendent groups in a polymer similar or the same as found in claim 1.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/16/05
Sanza L. McClendon

Examiner

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